REMARKS

The Office Action mailed May 13, 2008 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-8, 10-17, 19-30 and 32-35 are now pending in this application. Claims 1-8, 10-17, 19-30 and 32-35 stand rejected. Claims 9, 18-20, and 31-33 have been canceled.

The objection to the specification is traversed. Specifically, Claim 23 has been amended to recite "a portion of said trailing edge sidewall is recessed...." No new matter has been added. Accordingly, for at least the reasons set forth above, Applicants respectfully request the objections to the specification be withdrawn.

The objection to Claims 1-8 and 10 is respectfully traversed. Specifically, Claim 1 has been amended at line 1 to recite "a gas turbine engine...." Claims 2-8 and 10 depend from Claim 1. Accordingly, for at least the reasons set forth above, Applicants respectfully request the objections to Claims 1-8 and 10 be withdrawn.

The rejection of Claims 1-8 and 10 under 35 U.S.C. § 112 as failing to comply with the written description requirement is respectfully traversed. Currently, Claim 1 recites "positioning a seal pin within at least one of a leading edge seal pin cavity and a trailing edge seal pin cavity...." Applicants respectfully submit that such a recitation is supported in the specification. For example, paragraph 30 recites:

> *Each* shank seal pin slot 200 and 202 *is sized to receive a radial seal pin 204* to facilitate sealing between adjacent rotor blade shanks 64 when rotor blades 40 are coupled within the rotor assembly. Although leading edge radial seal pin slot 200 is sized to receive a radial seal pin 204 therein, *in the exemplary embodiment,* when rotor blades 40 are coupled within the rotor assembly, *a seal pin 204 is* ***only*** *positioned within trailing edge seal pin slot 202* and slot 200 remains empty. (emphasis added)

Applicants respectfully submit that in contrast to the assertions within the Office Action, that the original disclosure is not "limited to seal pin being positioned only in the trailing edge seal pin cavity 202." Rather, Applicants respectfully submit the language of

paragraph 30 should be read as being exemplary. Moreover, Applicants respectfully submit that one of ordinary skill in the art would understand, after reading the specification in light of the Figures, that although a pin is described in the exemplary embodiment as only being inserted in the trailing edge seal pin cavity, both seal pin cavities are sized to receive a pin and as such, a pin could be inserted in either, or both, seal pin cavities. Claims 2-8 and 10 depend from independent Claim 1. Accordingly, for at least the reasons set forth above, Applicants respectfully request the objections to Claims 1-8 and 10 be withdrawn.

The rejection of Claims 1, 2, 6, 11, 23, and 24 under 35 U.S.C. § 103(a) as being unpatentable over McRae, Jr. et al. (U.S. Patent No. 6,923,616) ("McRae") in view of Chamberlain (U.S. Patent No. 2,915,279) and Hull (U.S. Patent No. 2,912,223) is respectfully traversed.

McRae describes a rotor assembly (50) for a gas turbine engine (10). Rotor assembly (50) includes a plurality of rotor blades (52) that each include a platform (62), an airfoil (60), a shank (64), and a dovetail (66). Airfoil (60) extends radially outward from platform (62) and shank (64) extends radially inward from platform (62) to dovetail (66). Shank (64) includes a pair of opposed sidewalls (120 and 122) coupled together by an upstream sidewall (124) and a downstream sidewall (126). Platform (62) includes an upstream side or skirt (90) and a downstream side or skirt (92) which are connected with a pressure-side edge (94) and an opposite suction-side edge (96). Platform (62) also includes a forward angel wing (100), and an aft angel wing (102) which each extend outwardly from respective skirts (90 and 92). Skirts (90 and 92) facilitate sealing forward and aft angel wing buffer cavities (108 and 110). Notably, McRae does not describe nor suggest a first rotor blade that includes a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, wherein each of the leading edge and trailing edge seal pin cavities are defined adjacent to a convex wall defining the shank.

Chamberlin describes a turbine assembly (10) including a plurality of turbine blades (11) that each include an airfoil portion, a platform (12) and a root portion (14). An upstream face (15) of each root portion (14) includes a plurality of axially projecting ribs (20) that extend across the full face of the root portion (14). Circumferentially-spaced sides (17 and 18) of the root portion (14) each include a recess or depression (22) having a square cross-sectional shape. A rear wall of the depression constitutes a web (23) that is substantially planar and that is "inclined in a direction that corresponds to the direction of inclination of the blade proper." Col. 4, lines7-9. A corner (24) between each face (17) and upstream face (15) is cut away between root portion (14) and platform (12). Cut-away portion (24) enables cooling air to enter depressions (22) and form vortices which provide cooling to blade (11). A downstream side of face (17) includes a cut-away portion (26) to enable the spent cooling air to be discharged from depressions (22). Notably, Chamberlain does not describe nor suggest a first rotor blade that includes a shank that is defined by a convex wall. Moreover, Chamberlain does not describe nor suggest a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, wherein each of the leading edge and trailing edge seal pin cavities are defined adjacent to a convex wall defining the shank.

Hull describes a turbine disk (1) that includes a plurality of circumferentially-spaced turbine buckets (4). Each bucket (4) includes a blade portion (5) and base portion (6) that consists of a shank portion (6a) and a V-shaped dovetail (6b). A plurality of grooves (10, 11) are defined in a radial or sidewall surface of shank portion (6a). Special pins (13, 14) are disposed in the grooves (10, 11). The pins (13, 14) are spiral wound springs that expand to conform to the spaces (9) in which they are located to dampen bucket vibrational stresses. Moreover, as described at Column 3, lines 15-25, for example, the pins (13, 14) also provide "a seal in the space 9" to "prevent power fluid from leaking through this generous clearance space 9" defined between adjacent buckets (4). In each embodiment, Hull recites at Column 3, lines 31-36 that "the invention provides a combination vibration damping and sealing assembly disposed between the long shank portions of the buckets" that prevents "the leakage

of motive fluid therebetween. Notably, Hull does not describe nor suggest a shank defined by a convex wall. Moreover, Hull does not describe nor suggest permitting cooling fluid to flow between circumferentially adjacent shank portions.

Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method includes "providing a first rotor blade that includes an airfoil, a platform, a shank, an internal cavity, and a dovetail, wherein the airfoil extends radially outward from the platform, the platform includes a radially outer surface and a radially inner surface, the shank extends radially inward from the platform defined therein, and the dovetail extends from the shank, such that the internal cavity is defined at least partially by the airfoil, the platform, the shank, and the dovetail, wherein one wall of the shank is convex; . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . positioning a seal pin within at least one of a leading edge seal pin cavity and a trailing edge seal pin cavity defined within the shank and adjacent to the convex wall of the shank; and. . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform."

No combination of McRae, Chamberlain, and Hull describes nor suggests a method for assembling a rotor assembly as is recited in Claim 1. Specifically, no combination of McRae, Chamberlain, and Hull describes nor suggests providing a first rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin, and positioning a seal pin within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity defined adjacent to the convex wall, in combination with a platform having a recessed portion. Rather, McRae describes a platform that includes an upstream and a downstream skirt, and a forward and an aft angel wing which each extend outwardly from their respective skirts, such that the skirts facilitate sealing forward and aft angel wing buffer cavities, and Chamberlain describes a shank that is defined

by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over McRae in view of Chamberlain and Hull.

Claims 2 and 6 depend from independent Claim 1. When the recitations of Claim 2 and 6 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2 and 6 likewise are patentable over McRae in view of Chamberlain and Hull.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade includes "a shank extending radially inward from said platform, said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity each defined therein adjacent to a convex wall of said shank, each of said leading edge and said trailing edge pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity, said shank leading edge seal pin cavity facilitates increasing platform film cooling."

No combination of McRae, Chamberlain, and Hull describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 11. Specifically, no combination of McRae, Chamberlain, and Hull describes nor suggests a rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin that are each defined adjacent to a convex wall of the shank, in combination with a seal pin positioned within the trailing edge seal pin cavity, wherein the shank leading edge seal pin cavity facilitates increasing platform film cooling. Rather, McRae describes a platform that includes an upstream and a downstream skirt, and a forward and an aft angel

wing which each extend outwardly from their respective skirts, such that the skirts facilitate sealing forward and aft angel wing buffer cavities, and Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 11 is submitted to be patentable over McRae in view of Chamberlain and Hull.

Claim 23 recites a gas turbine engine rotor assembly including "a rotor shaft . . . a plurality of circumferentially-spaced rotor blades coupled to said rotor shaft, each said rotor blade comprising . . . a shank extending radially inward from said platform . . . . said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein, each said pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity . . . said shank leading edge seal pin cavity is sized to receive a radial seal pin therein and to channel airflow therethrough to facilitate increasing platform film cooling...."

No combination of McRae, Chamberlain, and Hull describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 23. Specifically, no combination of McRae, Chamberlain, and Hull describes nor suggests a gas turbine engine rotor assembly including a rotor blade that includes a shank that further includes a leading edge seal pin cavity and a trailing edge seal pin cavity, in combination with a seal pin position within the trailing edge seal pin cavity, wherein the leading edge seal pin is also sized receive a seal pin therein and is sized to channel airflow therethrough to facilitate increasing platform film cooling. Rather, McRae describes a platform that includes an upstream and a downstream skirt, and a forward and an aft angel wing which each extend outwardly from their respective skirts, such that the skirts facilitate sealing forward and aft angel wing buffer cavities, and

Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 23 is submitted to be patentable over McRae in view of Chamberlain and Hull.

Claim 24 depends from independent Claim 23. When the recitations of Claim 24 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claim 24 likewise is patentable over McRae in view of Chamberlain.

Moreover, if art "teaches a way" from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc. , 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited art, as a whole, is not suggestive of the presently claimed invention. Applicants respectfully submit McRae and Chamberlain each teach away from Hull. For example, no combination of McRae and Chamberlain describes nor suggests a rotor blade that includes a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity that are each defined adjacent to a convex shank wall, in combination with a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, such cooling air may be channeled through the leading edge seal pin cavity. For the reasons stated above, Applicants submit that one of ordinary skill in the art would not be motivated to combine the teachings of McRae and Chamberlain with Hull to provide a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein adjacent to a convex shank sidewall, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, wherein the leading edge seal cavity is sized to receive a seal pin therein and to channel cooling air therethrough.

Further, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. It appears that the present rejection reflects an impermissible attempt to use the instant claims as a guide or roadmap in formulating the rejection using impermissible hindsight reconstruction of the invention. The United States Supreme Court has recently expressed concern regarding distortion caused by hindsight bias in an obviousness analysis, and notes that factfinders should be cautious of arguments reliant upon ex post reasoning. See KSR International Co. v. Teleflex, Inc., slip Opinion at page 17. The Supreme Court also explained that, following "common sense," "familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." Id. at page 16. Applicants respectfully submit that the teachings of McRae, Chamberlain, and Hull do not fit together like pieces of a puzzle, but rather are isolated disclosures, which have been chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1, 2, 6, 11, 23, and 24 be withdrawn.

The rejection of Claims 1-3, 6-8, 11, 12, 16, 17, 23-25, 29 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Wilson et al. (U.S. Patent No. 5,281,097) ("Wilson") in view of Chamberlain and Hull is respectfully traversed.

Chamberlain and Hull are described above. Wilson describes a rotor assembly for a gas turbine engine that includes a plurality of rotor blades (18) that each include an airfoil (20), a platform (22), a shank (24) and a root (16). The shank (24) includes a pair of opposed, circumferentially-spaced sidewalls (not shown) coupled together by a leading edge sidewall (not shown) and a trailing edge sidewall (not shown). The radially inner side of each platform (22) is formed with a plurality of recesses (44) and inter-connected grooves

(46) that each extend circumferentially from each recess (44) to a circumferential edge (22c) of platform (22). Compressor discharge air is routed into a cooling cavity (28) defined within each blade (18) via a plurality of metering passages (49) defined within a portion of a turbine disk (12) to which blades (18) are coupled. The cooling air is then channeled outward from cavities (28) through a plurality of damper openings (48) formed in one of the circumferentially-spaced shank sidewalls. The cooling air is then channeled through grooves (46) to facilitate convectively cooling the platform (22). Notably, Wilson does not describe nor suggest a rotor blade that includes a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein adjacent to a convex shank sidewall, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity.

Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method includes "providing a first rotor blade that includes an airfoil, a platform, a shank, an internal cavity, and a dovetail, wherein the airfoil extends radially outward from the platform, the platform includes a radially outer surface and a radially inner surface, the shank extends radially inward from the platform defined therein, and the dovetail extends from the shank, such that the internal cavity is defined at least partially by the airfoil, the platform, the shank, and the dovetail, wherein one wall of the shank is convex; . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . positioning a seal pin within at least one of a leading edge seal pin cavity and a trailing edge seal pin cavity defined within the shank and adjacent to the convex wall of the shank; and. . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform."

No combination of Wilson, Chamberlain, and Hull describes nor suggests a method for assembling a rotor assembly as is recited in Claim 1. Specifically, no combination of

Wilson, Chamberlain, and Hull describes nor suggests providing a first rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin, and positioning a seal pin within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity defined adjacent to the convex wall, in combination with a platform having a recessed portion. Rather, Wilson describes a platform formed with a plurality of inter-connected grooves, wherein the platform is cooled by compressor discharge air routed into a cooling cavity defined within each blade, then channeled outward from the cavities through a plurality of damper openings formed in a circumferentially-spaced shank sidewall wherein the cooling air is then channeled through grooves to facilitate convectively cooling the platform, and Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Wilson in view of Chamberlain and Hull.

Claims 2, 3 and 6-8 depend from independent Claim 1. When the recitations of Claims 2, 3 and 6-8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2, 3 and 6-8 likewise are patentable over Wilson in view of Chamberlain and Hull.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade includes "a shank extending radially inward from said platform, said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity each defined therein adjacent to a convex wall of said shank, each of said leading edge and said trailing edge pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a

radial seal pin positioned within said trailing edge seal pin cavity, said shank leading edge seal pin cavity facilitates increasing platform film cooling."

No combination of Wilson, Chamberlain, and Hull describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 11. Specifically, no combination of Wilson, Chamberlain, and Hull describes nor suggests a rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin that are each defined adjacent to a convex wall of the shank, in combination with a seal pin positioned within the trailing edge seal pin cavity, wherein the shank leading edge seal pin cavity facilitates increasing platform film cooling. Rather, Wilson describes a platform formed with a plurality of inter-connected grooves, wherein the platform is cooled by compressor discharge air routed into a cooling cavity defined within each blade, then channeled outward from the cavities through a plurality of damper openings formed in a circumferentially-spaced shank sidewall wherein the cooling air is then channeled through grooves to facilitate convectively cooling the platform, and Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 11 is submitted to be patentable over Wilson in view of Chamberlain and Hull.

Claims 12, 16 and 17 depend from independent Claim 11. When the recitations of Claims 12, 16 and 17 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 12, 16 and 17 likewise are patentable over Wilson in view of Chamberlain and Hull.

Claim 23 recites a gas turbine engine rotor assembly including "a rotor shaft . . . a plurality of circumferentially-spaced rotor blades coupled to said rotor shaft, each said rotor blade comprising . . . a shank extending radially inward from said platform . . . . said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein, each said pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity . . . said shank leading edge seal pin cavity is sized to receive a radial seal pin therein and to channel airflow therethrough to facilitate increasing platform film cooling...."

No combination of Wilson, Chamberlain, and Hull describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 23. Specifically, no combination of Wilson, Chamberlain, and Hull describes nor suggests a gas turbine engine rotor assembly including a rotor blade that includes a shank that further includes a leading edge seal pin cavity and a trailing edge seal pin cavity, in combination with a seal pin position within the trailing edge seal pin cavity, wherein the leading edge seal pin is also sized receive a seal pin therein and is sized to channel airflow therethrough to facilitate increasing platform film cooling. Rather, Wilson describes a platform formed with a plurality of inter-connected grooves, wherein the platform is cooled by compressor discharge air routed into a cooling cavity defined within each blade, then channeled outward from the cavities through a plurality of damper openings formed in a circumferentially-spaced shank sidewall wherein the cooling air is then channeled through grooves to facilitate convectively cooling the platform, and Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks.

Accordingly, for at least the reasons set forth above, Claim 23 is submitted to be patentable over Wilson in view of Chamberlain and Hull.

Claims 24, 25, 29 and 30 depend from independent Claim 23. When the recitations of Claims 24, 25, 29 and 30 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claims 24, 25, 29 and 30 likewise are patentable over Wilson in view of Chamberlain.

Moreover, if art "teaches a way" from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc. , 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited art, as a whole, is not suggestive of the presently claimed invention. Applicants respectfully submit Wilson, Chamberlain, and Hull each teach away from the apparatus and method as is recited. For example, no combination of Wilson Chamberlain, and Hull describes nor suggests a rotor blade that includes a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity, that are each defined adjacent to a convex shank sidewall, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, wherein the leading edge seal pin cavity is sized to receive a seal pin and to channel cooling air therethrough. Accordingly, Applicants respectfully submit that the cited art as a whole teaches away from cooling apparatus as is recited. For the reasons stated above, Applicants submit that one of ordinary skill in the art would not be motivated to combine the teachings of Wilson and Chamberlain with Hull to provide a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein adjacent to a convex shank sidewall, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, wherein the leading edge seal cavity is sized to receive a seal pin therein and to channel cooling air therethrough.

Further, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose

among isolated disclosures in the art to deprecate the claimed invention. It appears that the present rejection reflects an impermissible attempt to use the instant claims as a guide or roadmap in formulating the rejection using impermissible hindsight reconstruction of the invention. The United States Supreme Court has recently expressed concern regarding distortion caused by hindsight bias in an obviousness analysis, and notes that factfinders should be cautious of arguments reliant upon ex post reasoning. See KSR International Co. v. Teleflex, Inc., slip Opinion at page 17. The Supreme Court also explained that, following "common sense," "familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." Id. at page 16. Applicants respectfully submit that the teachings of Wilson and Chamberlain do not fit together like pieces of a puzzle, but rather are isolated disclosures, which have been chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-3, 6-8, 11, 12, 16, 17, 23-25, 29 and 30 be withdrawn.

The rejection of Claims 1-6, 8, 11, 13-17, 23, 24, and 26-30 under 35 U.S.C. § 103(a) as being unpatentable over Lee (U.S. Patent No. 6,341,939) in view of Chamberlain and Hull is respectfully traversed.

Chamberlain and Hull are described above. Lee describes a turbine blade (10) including an airfoil (18), a shank (22), a dovetail (24), and a platform (20). Platform (20) extends between airfoil (18) and shank (22). Dovetail (24) extends radially from shank (22). A flow channel (28) extends through turbine blade (10) for channeling cooling air through blade (10). A pair of openings (36) each extends through opposite sides of shank (22) and into flow channel (28) to enable cooling air to be discharged from the cooling flow channel (28) outward through shank (22). Platform (20) includes a plurality of openings (38) that extend from a radially outer side (20a) of platform (20) to a radially inner side (20b) of platform (20). At least one of platform openings (38) is in tandem alignment with each shank

opening (36). Cooling air discharged from platform openings (38) provides convective and impingement cooling of the blade (10). Notably, Lee does not describe nor suggest a rotor blade that includes a shank defined by a convex sidewall that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity.

Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method includes "providing a first rotor blade that includes an airfoil, a platform, a shank, an internal cavity, and a dovetail, wherein the airfoil extends radially outward from the platform, the platform includes a radially outer surface and a radially inner surface, the shank extends radially inward from the platform defined therein, and the dovetail extends from the shank, such that the internal cavity is defined at least partially by the airfoil, the platform, the shank, and the dovetail, wherein one wall of the shank is convex; . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . positioning a seal pin within at least one of a leading edge seal pin cavity and a trailing edge seal pin cavity defined within the shank and adjacent to the convex wall of the shank; and. . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform."

No combination of Lee, Chamberlain, and Hull describes nor suggests a method for assembling a rotor assembly as is recited in Claim 1. Specifically, no combination of Lee, Chamberlain, and Hull describes nor suggests providing a first rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin, and positioning a seal pin within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity defined adjacent to the convex wall, in combination with a platform having a recessed portion. Rather, Lee describes a flow channel extending through a turbine blade for channeling cooling air through the blade and a pair of openings extending

through opposite sides of a shank and into the flow channel to enable cooling air to be discharged from the cooling flow channel outward through the shank. The platform includes a plurality of openings that extend from a radially outer side of the platform to a radially inner side of the platform, wherein at least one of the platform openings is in tandem alignment with each shank opening. Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Lee in view of Chamberlain and Hull.

Claims 2-6 and 8 depend from independent Claim 1. When the recitations of Claims 2-6 and 8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-6 and 8 likewise are patentable over Lee in view of Chamberlain and Hull.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade includes "a shank extending radially inward from said platform, said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity each defined therein adjacent to a convex wall of said shank, each of said leading edge and said trailing edge pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity, said shank leading edge seal pin cavity facilitates increasing platform film cooling."

No combination of Wilson, Chamberlain, and Hull describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 11. Specifically, no combination of Wilson, Chamberlain, and Hull describes nor suggests a rotor blade that includes a shank

defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin that are each defined adjacent to a convex wall of the shank, in combination with a seal pin positioned within the trailing edge seal pin cavity, wherein the shank leading edge seal pin cavity facilitates increasing platform film cooling. Rather, Lee describes a flow channel extending through a turbine blade for channeling cooling air through the blade and a pair of openings extending through opposite sides of a shank and into the flow channel to enable cooling air to be discharged from the cooling flow channel outward through the shank. The platform includes a plurality of openings that extend from a radially outer side of the platform to a radially inner side of the platform, wherein at least one of the platform openings is in tandem alignment with each shank opening. Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 11 is submitted to be patentable over Lee in view of Chamberlain and Hull.

Claims 13-17 depend from independent Claim 11. When the recitations of Claims 13-17 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 13-17 likewise are patentable over Lee in view of Chamberlain and Hull.

Claim 23 recites a gas turbine engine rotor assembly including "a rotor shaft . . . a plurality of circumferentially-spaced rotor blades coupled to said rotor shaft, each said rotor blade comprising . . . a shank extending radially inward from said platform . . . . said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein, each said pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity . . . said

shank leading edge seal pin cavity is sized to receive a radial seal pin therein and to channel airflow therethrough to facilitate increasing platform film cooling...."

No combination of Lee, Chamberlain, and Hull describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 23. Specifically, no combination of Lee, Chamberlain, and Hull describes nor suggests a gas turbine engine rotor assembly including a rotor blade that includes a shank that further includes a leading edge seal pin cavity and a trailing edge seal pin cavity, in combination with a seal pin position within the trailing edge seal pin cavity, wherein the leading edge seal pin is also sized receive a seal pin therein and is sized to channel airflow therethrough to facilitate increasing platform film cooling. Rather, Lee describes a flow channel extending through a turbine blade for channeling cooling air through the blade and a pair of openings extending through opposite sides of a shank and into the flow channel to enable cooling air to be discharged from the cooling flow channel outward through the shank. The platform includes a plurality of openings that extend from a radially outer side of the platform to a radially inner side of the platform, wherein at least one of the platform openings is in tandem alignment with each shank opening. Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks. Accordingly, for at least the reasons set forth above, Claim 23 is submitted to be patentable over Lee in view of Chamberlain and Hull.

Accordingly, for at least the reasons set forth above, Claim 23 is submitted to be patentable over Lee in view of Chamberlain.

Claims 24 and 26-30 depend from independent Claim 23. When the recitations of Claims 24 and 26-30 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claims 24 and 26-30 likewise are patentable over Lee in view of Chamberlain and Hull.

Moreover, if art "teaches a way" from a claimed invention, such a teaching supports the nonobviousness of the invention. U.S. v. Adams, 148 USPQ 479 (1966); Gillette Co. v. S.C. Johnson & Son, Inc. , 16 USPQ2d 1923, 1927 (Fed. Cir. 1990). In light of this standard, it is respectfully submitted that the cited art, as a whole, is not suggestive of the presently claimed invention. Applicants respectfully submit Lee, Chamberlain, and Hull each teach away from the apparatus and method as is recited. For example, no combination of Lee, Chamberlain, and Hull describes nor suggests a rotor blade that includes a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity, that are each defined adjacent to a convex shank wall, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, wherein the leading edge seal pin cavity is sized to receive a seal pin and to channel cooling air therethrough. Accordingly, Applicants respectfully submit that the cited art as a whole teaches away from cooling apparatus as is recited. For the reasons stated above, Applicants submit that one of ordinary skill in the art would not be motivated to combine the teachings of Lee and Chamberlain with Hull to provide a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein adjacent to a convex shank sidewall, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity, wherein the leading edge seal cavity is sized to receive a seal pin therein and to channel cooling air therethrough.

Further, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. It appears that the present rejection reflects an impermissible attempt to use the instant claims as a guide or roadmap in formulating the rejection using impermissible hindsight reconstruction of the

invention. The United States Supreme Court has recently expressed concern regarding distortion caused by hindsight bias in an obviousness analysis, and notes that factfinders should be cautious of arguments reliant upon ex post reasoning. See KSR International Co. v. Teleflex, Inc., slip Opinion at page 17. The Supreme Court also explained that, following "common sense," "familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." Id. at page 16. Applicants respectfully submit that the teachings of Lee, Chamberlain, and Hull do not fit together like pieces of a puzzle, but rather are isolated disclosures, which have been chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-6, 8, 11, 13-17, 23, 24, and 26-30 be withdrawn.

The rejection of Claims 21, 22, 34, and 35 under 35 U.S.C. § 103(a) as being unpatentable over either McRae, Chamberlain and Hull in further view of Tomberg et al. (U.S. Patent No. 6,808,368) ("Tomberg") is respectfully traversed.

McRae, Chamberlain, and Hull are described above. Tomberg describes an airfoil shape for a turbine bucket (16). Turbine bucket (16) includes an airfoil (36), a platform (30), a shank (32), and a dovetail (32) for connection with a complementary-shaped mating dovetail (not shown) on a rotor wheel (21). First stage buckets (16) are mounted on turbine rotor (17) via a rotor wheel (19). A second stage of turbine (12) include a plurality of circumferentially spaced nozzles (18) and a plurality of circumferentially spaced buckets (20) mounted on rotor (17). A third stage of turbine (12) also includes a plurality of circumferentially spaced nozzles (22) and buckets (24) mounted on rotor (17). Each bucket (20) has a bucket airfoil (36) and includes a bucket airfoil profile (38) at any cross-section from the airfoil root (31) at a midpoint of platform (30) to the bucket tip (33). Notably, Tomberg does not describe nor suggest a rotor blade that includes a shank that includes a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein adjacent to a

convex shank sidewall, and a seal pin positioned within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade includes "a shank extending radially inward from said platform, said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity each defined therein adjacent to a convex wall of said shank, each of said leading edge and said trailing edge pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity, said shank leading edge seal pin cavity facilitates increasing platform film cooling."

No combination of McRae, Chamberlain, Hull, and Tomberg describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 11. Specifically, no combination of McRae, Chamberlain, Hull, and Tomberg describes nor suggests a rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin that are each defined adjacent to a convex wall of the shank, in combination with a seal pin positioned within the trailing edge seal pin cavity, wherein the shank leading edge seal pin cavity facilitates increasing platform film cooling. Rather, McRae describes a platform that includes an upstream and a downstream skirt, and a forward and an aft angel wing which each extend outwardly from their respective skirts, such that the skirts facilitate sealing forward and aft angel wing buffer cavities, and Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks, and Tomberg merely describes an airfoil shape for a turbine bucket wherein each bucket has an airfoil and includes a bucket airfoil profile at any cross-section from the airfoil root at a midpoint of the platform to the bucket tip in the shape

of an airfoil. Accordingly, for at least the reasons set forth above, Claim 11 is submitted to be patentable over McRae in view of Chamberlain and Hull and further in view of Tomberg.

Claims 21 and 22 depend from independent Claim 11. When the recitations of Claims 21 and 22 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 21 and 22 likewise are patentable over McRae in view of Chamberlain and Hull and further in view of Tomberg.

Claim 23 is recited above.

No combination of McRae, Chamberlain, Hull, and Tomberg describes nor suggests a gas turbine engine, as is recited in Claim 23. Specifically, no combination of McRae, Chamberlain, Hull, and Tomberg describes nor suggests a gas turbine engine rotor assembly including a rotor blade that includes a shank that further includes a leading edge seal pin cavity and a trailing edge seal pin cavity, in combination with a seal pin position within the trailing edge seal pin cavity, wherein the leading edge seal pin is also sized receive a seal pin therein and is sized to channel airflow therethrough to facilitate increasing platform film cooling. Rather, McRae describes a platform that includes an upstream and a downstream skirt, and a forward and an aft angel wing which each extend outwardly from their respective skirts, such that the skirts facilitate sealing forward and aft angel wing buffer cavities, and Chamberlain describes a shank that is defined by substantially planar walls and that includes an upstream face that is cut away between the root portion and a platform such that cut-away portion enables cooling air to enter depressions formed in the root portion and form vortices to provide cooling to a blade, and a downstream side of each root portion face that includes a cut-away portion to enable spent cooling air to be discharged from the depressions. Moreover, Hull describes a bucket shank that appears to be defined by substantially planar walls and that includes a platform that does not include any recessed portions to enable cooling fluid to flow between circumferentially adjacent bucket shanks, and Tomberg merely describes an airfoil shape for a turbine bucket wherein each bucket has an airfoil and includes a bucket airfoil profile at any cross-section from the airfoil root at a midpoint of the platform to the bucket tip in the shape of an airfoil. Accordingly, for at least the reasons set forth

above, Claim 23 is submitted to be patentable over McRae in view of Chamberlain and Hull, and further in view of Tomberg.

Claims 34 and 35 depend from independent Claim 23. When the recitations of Claims 34 and 35 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claims 34 and 35 likewise are patentable over McRae in view of Chamberlain and Hull, and further in view of Tomberg.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 19, 21, 22, 32 and 34-35 be withdrawn.

The provisional rejections of Claims 1-8, 10-17, 19-30, and 32-35 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over various combinations of Claims 1, 2, 4, 8-10, 14, 16 and 18-21 of Benjamin et al. (U.S. Patent No. 7,147,440) ("Benjamin '440"), in view of various combinations of McRae, Wilson, Chamberlin, Tomberg, Hull, and/or Lee are respectfully traversed.

Applicants respectfully traverse the Examiner's assessment of the differences between the claimed invention and Benjamin '440. Under an analysis for obviousness type double patenting, the claims of the commonly owned U.S. Patent 7,147,440 must be compared with the claims of the present application, and the commonly owned patents are not prior art to the pending claims. The sole inquiry is whether the claims in the instant application would be obvious over the claims of the commonly owned patents. See MPEP § 804. The claims must be considered in their entirety in making an obviousness determination.

Considering only the claims of Benjamin '440 and the currently pending claims in the present application, clear differences are believed to be evident. The Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to more broadly set forth the patent claims of Benjamin '440 in view of McRae, Wilson, Chamberlin, Tomberg, Hull, and/or Lee. Applicants respectfully traverse this assertion and

submit that the present claims do not simply restate recitations of Benjamin '440. Applicants respectfully submit that the recitations of subject matter not found in Claims 1, 2, 4, 8-10, 14, 16 and 18-21 of Benjamin '440, together with the omission of subject matter found in Benjamin '440 is not obvious and is not merely a restatement of the prior language. There is no apparent reason, considering only the claims of Benjamin '440, as the obviousness-type double patenting analysis requires, why one of ordinary skill in the art would omit certain recitations and include other recitations in a manner that would have resulted in the present claims and, accordingly, it is submitted that the present claims are not obvious over the claims of Benjamin '440.

Moreover, no combination of Benjamin '440, McRae, Wilson, Chamberlin, Tomberg, Hull, and Lee describes nor suggests the present invention. Specifically, Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method includes "providing a first rotor blade that includes an airfoil, a platform, a shank, an internal cavity, and a dovetail, wherein the airfoil extends radially outward from the platform, the platform includes a radially outer surface and a radially inner surface, the shank extends radially inward from the platform defined therein, and the dovetail extends from the shank, such that the internal cavity is defined at least partially by the airfoil, the platform, the shank, and the dovetail, wherein one wall of the shank is convex; . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . positioning a seal pin within at least one of a leading edge seal pin cavity and a trailing edge seal pin cavity defined within the shank and adjacent to the convex wall of the shank; and. . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform."

No combination of McRae, Wilson, Chamberlin, Tomberg, Hull, and Lee describes nor suggests a method for assembling a rotor assembly as is recited in Claim 1. Specifically,

no combination of McRae, Wilson, Chamberlin, Tomberg, Hull, and Lee describes nor suggests providing a first rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin, and positioning a seal pin within at least one of the leading edge seal pin cavity and a trailing edge seal pin cavity defined adjacent to the convex wall, in combination with a platform having a recessed portion.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade includes "a shank extending radially inward from said platform, said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity each defined therein adjacent to a convex wall of said shank, each of said leading edge and said trailing edge pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity, said shank leading edge seal pin cavity facilitates increasing platform film cooling."

No combination of McRae, Wilson, Chamberlin, Tomberg, Hull, and Lee describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 11. Specifically, no combination of McRae, Wilson, Chamberlin, Tomberg, Hull, and Lee describes nor suggests a rotor blade that includes a shank defined by a convex wall and that includes a leading edge seal pin cavity and a trailing edge seal pin that are each defined adjacent to a convex wall of the shank, in combination with a seal pin positioned within the trailing edge seal pin cavity, wherein the shank leading edge seal pin cavity facilitates increasing platform film cooling.

Claim 23 recites a gas turbine engine rotor assembly including "a rotor shaft . . . a plurality of circumferentially-spaced rotor blades coupled to said rotor shaft, each said rotor blade comprising . . . a shank extending radially inward from said platform . . . . said shank comprising a leading edge seal pin cavity and a trailing edge seal pin cavity defined therein, each said pin cavity facilitates sealing between adjacent pairs of said rotor blades, said shank further comprises a radial seal pin positioned within said trailing edge seal pin cavity . . . said shank leading edge seal pin cavity is sized to receive a radial seal pin therein and to channel airflow therethrough to facilitate increasing platform film cooling...."

No combination of McRae, Wilson, Chamberlin, Tomberg, Hull, and Lee describes nor suggests a rotor blade for a gas turbine engine as is recited in Claim 23. Specifically, no combination of McRae, Wilson, Chamberlin, Tomberg, Hull, and Lee describes nor suggests a gas turbine engine rotor assembly including a rotor blade that includes a shank that further includes a leading edge seal pin cavity and a trailing edge seal pin cavity, in combination with a seal pin position within the trailing edge seal pin cavity, wherein the leading edge seal pin is also sized receive a seal pin therein and is sized to channel airflow therethrough to facilitate increasing platform film cooling. For the reasons set forth above, Applicants respectfully request that the provisional rejections of Claims 1-8, 10-17, 19-30, and 32-35 under the judicially created doctrine of obviousness-type double patenting be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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